

Course Name (Linux Administration)

1	Subject Name	RedHat Enterprise Linux 7
2	Course Code	
3	Teaching Hours/week	2 hours/Week
4	Practical /week	1 Hour/Week
5	Credits	4
6	Reference Book	Red Hat System Administration I, II & III
7	Teaching method	Lecture & Problem Based Learning
8	Subject Status	
9	Prerequisite	Knowledge of Network Fundamentals

Course Description

This course will equip the students with the RHEL7 administrative skill. The course has three main phases which start with the basics of the course then to the medium level and finally the advance RHEL7 administrative tasks. The course is about 90% practical.

Learning Objectives

This course will provide a basic to advance RHEL7 skills to the students, the students will learn how to implement, manage, control and administer a network using the RHEL7 operating system by the end of this course.

Week 1	Introduction of the course: - Open source vs non-open source software - Philosophy of open source software - Open source software usage - Introduction to RHEL7 desktop environment - RHEL7 installed - RHEL7 terminals - Bash shell - Executing commands using bash shell - Basic commands - RHEL7 file system hierarchy
Week 2	Managing files & getting help in Linux - Creating directories and files - Copying directories and files - Moving directories and files - Renaming directories and files - Deleting directories and files - COMPUTER LAB (STUDENTS PRACTICE)
Week 3	Getting Help in Linux & working with files using vim and gedit editors: - Getting help using man command - Getting help using -help command - Getting help using pinfo command - SoS Report - Viewing & creating files with cat command - Editing files with vim editor - Editing files with gedit editor - COMPUTER LAB (STUDENTS PRACTICE)
Week 4	local users and groups and Managing files & folder permission - Local users and groups in Linux - Creating users and groups - Deleting users and groups - Adding users into groups - User ID and Group ID in Linux - Resetting users password - Password policies - COMPUTER LAB (STUDENTS PRACTICE)
Week 5	Managing files & folder permission - Default file and directory permission - Setting file and directory permissions - Modifying files and directory permission - Setting umask value - COMPUTER LAB (STUDENTS PRACTICE)

Week 6	Displaying Linux Process: - Displaying Linux process using different commands - Working with Linux processes & Killing Linux Processes - COMPUTER LAB (STUDENTS PRACTICE)
Week 7	Services & Daemons plus logs & yum server: - Viewing Linux services - Starting, stopping, restarting, disabling, enabling services - Viewing Linux logs using different commands - Installing, uninstalling and updating software using yum - COMPUTER LAB (STUDENTS PRACTICE)
Week 8	Managing RHEL7 Networking & SSH configuration - Viewing the current IP add of the system - Setting dynamic IP address - Setting static IP, DNS server IP and default gateway - Editing the ip configuration file - Different usage of the nmcli command - Setting hostname and viewing hostname configuration file - Configuring SSH - Access remote system using SSH - COMPUTER LAB (STUDENTS PRACTICE)
MID TERM EXAMINATION	
Week 9	Copying files between systems & controlling access to the files - Copying files between systems using scp - Access Control List (ACL) - Securing files with ACL - Interpreting ACLs - COMPUTER LAB (STUDENTS PRACTICE)
Week 10	Managing SELinux security - SELinux - Changing SELinux modes - Changing SELinux Booleans - COMPUTER LAB (STUDENTS PRACTICE)
Week 11	Managing & sharing files with NFS - NFS installation - NFS configuration - Managing files with NFS - COMPUTER LAB (STUDENTS PRACTICE)

Week 12	Managing Firewall & Network Port Security - Checking Firewall status - Firewall zones - Allowing or blocking services in firewall - Allowing or blocking port numbers in firewall - Port-forward configuration - Creating rich rules in firewall - Assigning different NICs into different zones - Working with firewall service - COMPUTER LAB (STUDENTS PRACTICE)
Week 13	Installation and management of DNS server - What's DNS sever - DNS server installation - Editing DNS zone files - Adding DNS records into DNS zone files - DNS uninstallation - COMPUTER LAB (STUDENTS PRACTICE)
Week 14	Apache Web Server: - what is apache web server - Apache HTTPD - Installation - Uninstallation - Working with DHCP configuration file - COMPUTER LAB (STUDENTS PRACTICE)
Week 15	Mail server configuration: - what's mail server - mail server installation - mail server uninstallation - COMPUTER LAB (STUDENTS PRACTICE)
Week 16	DHCP Server: - DHCP - DHCP server installation - DHCP Server Configuration - DHCP Server uninstallation - COMPUTER LAB (STUDENTS PRACTICE)

Assessment

- 1) Midterm exams 20 %
- 2) Attendance and group work 10 %
- 3) Projects, presentations, and other tasks 10 %
- 4) Final Exam 60 %

Total Marks:

100

Recommended Books:

- Red Hat System Administration I
- Red Hat System Administration II
- Red Hat System Administration III